# BlueView

# **PDS2000**

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# **1** Introduction

## **1.1 BlueView**

This document is made as an additional section for the BlueView sonar to explain the interface setup, the setup of PDS2000 for a BlueView sonar project and the basic use of PDS2000 for this sonar.

This document consists of 4 sections:

- Getting started; describes basically the parts and connections in a common PDS2000 BlueView sonar project. The network of the computer must be setup correctly to establish communication with the sonar.
- Setup a PDS2000 project; describes the wizard used to setup a new PDS2000 project. A PDS2000 project could always be changed after wards.
- Operate; describes basic views used with a BlueView PDS2000 project, logging of data and replay of logged data.
- Appendix Installing PDS2000; describes how to install PDS2000.

This manual will only explain parts related to the BlueView Sonar application. For other information about PDS2000 see the PDS2000 User Manual (the file <u>PDS2000 User Manual.pdf</u> in the folder 'manuals').

This manual is also available as a HTML Help file and can be opened with F1 or with *Help > Help Topics* from the menu bar.

PDS2000 Instruction movies are available on the PDS2000 YouTube channel. <u>Watch PDS2000 instruction movies</u>.



# **2 Getting started**

# **2.1 Introduction**

In this section a basic setup for the BlueView sonar and PDS2000 is described.

## 2.2 Connections

Schematically a setup can be represented as:





In this schematic we see the Sonar head connected to a Power of Ethernet (POE) box. From this POE an Ethernet cable is connected to the computer running PDS2000 and optionally the BlueView ProViewer software. Sensors as a GPS receiver, a Heading sensor etc. are also interfaced to the computer. Refer to the BlueView sonar manual for sonar connection and installation details. It depends of the user configuration which sensors are used and how they are interfaced.

It is <u>NOT</u> possible to run PDS2000 and the BlueView's ProViewer software <u>simultaneously</u>.



# 2.3 Computer requirements

The minimum requirements for running PDS2000 are:

- CPU: modern Quad core Processor but preferred 8 core;
- Graphic card with OPENGL support and 1Gb of memory;
- 4Gb internal memory;
- 500Gb Hard disk;
- Multi serial I/O card when sensors are interfaced to the computer serially;
- 32 bits or 64 bits MS windows XP professional service pack 3 or higher, MS Windows Vista or MS windows 7;
- DVD/CD Drive.

Refer to the PDS2000 user manual for more specifications.

# 2.4 Configure the computer

As indicated in the section 'Connections' the sonar head is connected by the Power Over Ethernet (POE) module to the computer by an Ethernet cable. It is therefore required to configure the computer's Ethernet port.

The sonar head has a fixed IP address which could be configured by the BlueView ProViewer software. Refer to the ProViewer manual for more details.



By default the IP address of an BlueView sonar system is 192.168.1.45

It is required to configure the network port of the computer in the same IP range. (This means when the sonar was configured with its default address in the range of 192.168.1.xx with xx as a unique number)

The below table describes how to configure the computer IP address for MS Windows7. For other Windows versions the procedure is almost similar.









Step	Action		
4	Select 'Change adapter settings'.		
4	Select 'Change adapter settings'.		
5	The available computer connections are listed. In this example only one, but more are possible.		
	Image: Construction image: Construc		
6	Right click at the LAN connection on which the sonar is connected, and select in the context menu ' <i>Properties</i> '.		
	Status         Diagnose         Bridge Connections         Create Shortcut         Delete         Rename         Properties		



Step	Action	
7	In the next window click at ' <i>Internet Protocol Version 4</i> ( <i>TCP/IPv4</i> )' and click ' <i>Properties</i> '.	
	Local Area Connection Properties   Networking   Connect using:    Realtek PCle GBE Family Controller     This connection uses the following items:     I Client for Microsoft Networks     I Client for Microsoft Networks     I File and Printer Sharing for Microsoft Networks     I Internet Protocol Version 6 (TCP/IPv6)      I Internet Protocol Version 4 (TCP/IPv4)      I Install    Uninstall    Properties    Description     Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.     OK	
8	Check the 'Use the following IP address' button, and fill in the required IP address and subnet mask. The computer's IP address must be in the range of the sonar's IP address but could not be the same address as the sonar or could not end on 0. When the sonar is set to its default address 192.168.1.45 for example a computer IP address of 192.168.1.3 could be used. Set the subnet mask to 255.255.255.0 Terret Protocol Version 4 (TCP/IPv4) Properties Vou can get IP settings assigned automatically if your network administrator for the appropriate IP settings. Obtain an IP address automatically Use the following IP address: Use the following IP address automatically Use the following IP address: Use the following IP address: Use the following IP address automatically Use the following IP address automaticall	
9	Click ' $OK$ ' to close the wizard.	



When a firewall is enabled it possibly blocks PDS2000 or the Blueview ProViewer software. Disable the firewall or unblock (allow access) for the program(s) to work.

🔐 Windows Security Alert		
Windows Firewall has blocked some features of this program		
Windows Firewall has blocked some features of RESON SeaBat UI on all public and private networks.		
Name: RES	DN SeaBat UI	
Publisher: Unkr	IOWN	
Path: C:\p v4.1	rogram files (x86)\reson\seabat ui .0.7\seabatui.exe	
Allow RESON SeaBat UI to communicate on these networks:		
Private networks, such as my home or work network		
Public networks, such as those in airports and coffee shops (not recommended because these networks often have little or no security)		
What are the risks of allowing a program through a firewall?		
Allow access Cancel		
E: 0.0 E: #		

Figure 2-2 Firewall

The computer is ready for use.

It takes approximately one minute for the sonar to initialize after power up.



# 3 Setup a PDS2000 project

# **3.1 Introduction**

This section describes how to setup a PDS2000 project for use with the BlueView sonar. It only describes the basics to setup a project which could be used as a starting point. Refer to the PDS2000 user manual for full details about PDS2000 and its possibilities.

See appendix 'Installing PDS2000' on page 99 for installation instructions of the PDS2000 software package.

When PDS2000 was installed successfully the 'New project wizard' could be started.

## 3.2 Start PDS2000

During installation of PDS2000 an icon was created at the desktop. Double click the icon to start PDS2000.



PDS2000 icon

## 3.3 Start the new project wizard

When there are no projects defined as for example PDS2000 is started for the first time a dialog box appears. Alternatively when already a project was defined and PDS2000 starts the wizard could be started from the PDS2000 control Center's menu bar.

## 3.3.1 When PDS2000 is started for the first time

When PDS2000 was installed successfully and PDS2000 is started for the first time a dialog box will appear.

As there are no projects created yet the 'Projects' field is empty.

Tick the '*Run the New Project wizard*' and click '*Ok*' to start creating a new project.



Select Project			
Please select an existing project or enable the check box to create a new project.			
Project path:	Change Project Path		
C: \Users\Public\Documents\PDS2000 Projects\			
Projects common files path: 😰 Use Default	Change Common File Path		
C:\Users\Public\Documents\PDS2000 Projects\Projects Common Files\			
Projects:			
Run the New Project wizard	OK Cancel		

Figure 3-2 Select project dialog box

## 3.3.2 When already a other project was defined

When PDS2000 starts normally, because already a project was defined, a new project could generated in the PDS2000 Control Center by clicking *'File' > 'New Project'*.

PIIS Contro	ol Center - [	Explorer]		×4.	10104		
File File	Edit Viev	v System	Acquisition	Processin	g Tools	Window	Help
	New Projec	Ð		Ctrl+N	N 📑 Ö	ं 🛋 👏 ।	🛕
Dra	Open Proje	ct		Ctrl+0	Configurat	ion	
Blu	Create Proj	ect from Lo	g Data		BV	JUIT:	-
	Print Setup						
Pr	Exit				a Report	Sonar Tar	gets Ca
Fiaure	3-3	New Pi	oiect in th	e PDS2	000 Co	ntrol Ce	enter

# 3.4 The New Project Wizard

## 3.4.1 Project Name

The new project starts with the Project Name dialog box. See figure below.

- 1 Enter a project name.
- 2 Select 'Start with empty project'
- 3 Click 'Next'.



Project Name	
New project name:	New Project
2 Start with empty project	
O Use existing project as "te	mplate"
	2010-02 Wreck Surveys
Į	weever Enderstoom
	HIII Project Uli Water Column Data MB TT 10211
	3
	< Back Next > Cancel

Figure 3-4 Project Name dialog box

## **3.4.2 Project Configuration**

In the next dialog box the Project Configuration parameters could be set.

Refer to the user manual for full details. The most important settings are the 'Units' and the used 'Coordinate system'.

Units	System units			ОК	
Coordinate System	Name: M	eters		Cano	
D Formats	The System Unit can be changed in the Coordinate System configuration.				
File History Disk Space	Speed Units	Knots	-	<u> </u>	
Alert Sounds	Distance Units	Meters	-		
Options	Volume Units	Cubic Meters	-		
Gps Time Parameters Sonar Target Parameters	Density Units	Tons/m <sup>3</sup>	-		
Icon Images	Velocity Units	Meters/second	-		
	Production Units	Tons/second	-		
	Height Units	Meters	-		
	Pressure Units	Bars	-	=	
	Power Units	Kilowatts	-		
	Revolutions Units	Revolutions/min	-		
	Weight Units	Tons	-		
	Pitch Units	Degrees (Bow Up +)	-		
	Roll Units	Degrees (Port Up +)	-		
	Acceleration Units	Meters/Second <sup>2</sup>	-		
	Angular Rate Units	Degrees/Second	-		
	Delivery Units	Cubic meters/second	-		
	Angular Units	Degree	-	-	

Figure 3-5 Units

Click 'Coordinate system'.



It is very important to select the correct coordinate system used for the project. Data like an electronic navigation chart will otherwise not match with the vessel position.

See figure below.

Project Configuration - bv new project
Description       Coordinate system         Coordinate System       California Zone 1 - NAD83(HARN)         Coordinate System       Select         Prime Parameters       Sonar Target Parameters         Sonar Target Parameters       Condinate System         Non Images       Shift X(m): 0         Shift X(m): 0       Shift X(m): 0<

Figure 3-6 Coordinate system

When the '*Selec*t' button is pressed a pre-defined coordinate system could be selected from the database.

Select Coordinate System	Card State up the	1790 B 40 (1991	×
Coordinate	Coordinate system		
÷Portugal			
🗄 · Qatar			
🗄 · Romania			
i romania wgs			
🗄 Russia			
🗄 Saudi Arabia			
🗄 ·· Singapore			
🗄 · South Africa			
🗄 · South Korea			
🕂 Spain			
🗄 Sweden			
🕂 Thailand			
🗄 ·· Tunesia			
- Turkey			
🕂 United Kingdom			
USA - NAD83			
🖶 USA - NAD83 (Feet)			
⊕ USA - NAD83(HARN)			
🗄 USA - NAD83(HARN) (Feet)			
i ⊕. · User			
🖶 User Defined			
. User Defined Coordinate Systems			
🕮 UserDefined			
		OK	Cancel
			Cancer

Figure 3-7 Database with pre-defined coordinate systems

Example:



When for example a coordinate system for the USA has to be used, scroll from the above list to USA. As could be seen different systems in the USA are used.

	⊕ • Thailand	
	🗄 Tunesia	
	🗄 - Turkey	
	🗄 ·· United Kingdom	
	⊕ USA - NAD83	
	🗄 USA - NAD83 (Feet)	
	🗄 USA - NAD83(HARN) (Feet)	
	🕀 User	
	😟 User Defined	=
	🗄 User Defined Coordinate Syst	ems
	. UserDefined	
Fi	gure 3-8 Coordina	ate systems USA

In case UTM needs to be used as coordinate system, they are listed in 'World – WGS84 – UTM Zones'

⊕ Oser Denneu Coordinate Systems	
🕀 UserDefined	
連 Vietnam	
🖮 World - WGS84 - UTM Zones	
	-

Figure 3-9 UTM zones

In case of USA -NAD83(HARN) expand the list by clicking '+'.

The list expands and the applicable system could be selected. For example 'California zone 1'



Figure 3-10 Coordinate systems

The parameters for this system as set in PDS2000 are listed.





Figure 3-11 Coordinate system parameters

Click 'Ok' to continue.

When the coordinate system needed for the project is not listed it could be created.

Click 'New' when a new coordinate system needs to be defined.





A coordinate system wizard will start:



Coordinate System Wizard	×
New Coordinate System	1 of 12
A New coordinate system name: B Based on existing coordinate system i transformation parameters, the p geoid corrections, and the post g changed.	system: s used, the datum rojection parameters, the rid corrections can be
<pre></pre>	C Next > Cancel Help

Figure 3-13 Coordinate system wizard

- A. Enter a name of the coordinate system.
- B. When the new created coordinate system is based on an existing coordinate system the associated checkbox could be checked.
- C. Click *Next'* to continue. The wizard will continue to define the coordinate system. Refer to the PDS2000 user manual for more details.

Click '*Edit*' to edit a created coordinate system. Refer to the PDS2000 user manual for more details.

Description				ОК
ui Units	Coordinate system	ETRS 89 - RD (2008)	Select	
<ul> <li>Coordinate System</li> <li>Formats</li> <li>Log Files</li> <li>Jie History</li> <li>Disk Space</li> <li>Alert Sounds</li> <li>Options</li> <li>Gps Time Parameters</li> <li>Sonar Target Parameters</li> <li>Icon Images</li> </ul>	SYSTEM: ETRS 89 - R Description: Netherlau ELLIPSOID: Bessel 18 Semi-Mayner Squared ec DATUMTRANSFORMA Datum Tran Method: Bu Shift X(m): Shift X(m): Shift X(m): Shift X(m): Rotation X( Rotation Y( Rotation Y( Rotation Y( Rotation Y( Rotation Y( Rotation Y( Rotation Z( Scale facto Prime meridi Satellite ellipso Description UNIT: Meters Metric Conv Suffix: m	D (2008) nds 41 Axis:6377397.155 iing:299.15281283602 centricity:0.006674372231 TION : ETRS 89 - RD (2008 isformation from ETRS 89: ursa/Wolfe(7 Parameters) -565.4136 -50.336 -465.5516 sec): 0.39895 sec): 0.34398 sec): 1.8774 (Ippm]: -4.0725 ian sh(deg): 0 posoid: ETRS 89 id: Bessel 1841 : version Factor:1	):ETRS 89 to Ber	Cancel

Figure 3-14 Edit coordinate system



Only user created coordinate systems could be edited.

Click 'Next' when a coordinate system selection is done to continue.

roject Configuration				×
Description	Coordinate system	ETRS 89 - RD (2008)	Select	
Coordinate System  Coordinate Sy	SYSTEM: ETRS 89 - R Description: Netherla ELLIPSOID: Bessel 18 Semi-Major Inv. Flatte Squared ec DATUMTRANSFORM/ Datum Trai Method: B Shift X(m): Shift X(m): Shift X(m): Shift X(m): Shift X(m): Shift X(m): Shift X(m): Shift Z(m): Rotation XI Rotation ZI Scale facto Prime meric Satellite ell Local ellipsi Description	D (2008) inds 341 Axis:6377397.155 ining:299.15281283602 iccentricity:0.006674372231 ATION : ETRS 89 - RD (2008) isformation from ETRS 89: ursa/Wolfe(7 Parameters) -565.4136 -565.516 (sec): 0.39895 (sec): 0.34398 (sec): 0.34398 (sec): 0.34398 (sec): 1.8774 r[ppm]: -4.0725 Jian sh(deg): 0 ipsoid: ETRS 89 pid: Bessel 1841 : version Factor:1	ETRS 89 to Bet	
	Suffix: m	III New	Edit	
		<	Back Next >	Cancel

Figure 3-15 'Next' to continue wizard



## 3.4.3 Select Application Type

The next dialog is the application type selection. The availability of application types depends on the purchased options that are laid down in the PDS2000 dongle.

For the BlueView sonar the application type '*Multibeam Survey*' needs to be selected.

ect Application Type			
Application types:			
Cutter Dredge		*	
Dredge Monitor			
Excavator			
Grad Crane Dredge Harvester			
Jet Dredge			
Leak Detection		=	
Maggy Survey			
Multibeam Survey			
Multivessel Survey			
Obstacle Avoidance Navigation			
Pipe Position Monitor			
Pipe Position Monitor J-Lay		<b>•</b>	
	Multibarra Company		
Selected application type:	Mulubeam Survey		
		C Back Nevt >	Cancel

Figure 3-16 Multibeam Survey application

Click 'Next' to continue.

## 3.4.4 Configuration wizard

In the next dialog box the configuration wizard could be started by ticking the checkbox. Tick the *'Run the configuration wizard'* checkbox and click *'Next'* to continue.



Run Configuration Wizard		×
To make the project ready for use a configuration needs to be made. At this time there are no configurations defined. To run the configuration wizard press the 'Next' button. If you do not want to create a configuration at this stage, disable the checkbox below and then press the 'Next' button.		
	< Back Next >	Cancel

Figure 3-17 Run Configuration Wizard

### 3.4.4.1 Configuration name

Enter a name for the configuration and click 'Next' again to continue.

Configuration Name	
The configuration Please enter a file	ı will be saved to disk. e name for the new configuration below.
Name:	BlueView

Figure 3-18 Configuration Name



#### 3.4.4.2 Add Vessel

Click in the appeared dialog box at 'Add' to add a new vessel when not yet defined.

Vessels	contraction for facer holder.	
Type	ID Vessel	Add Edit Remote Add Edit Remove
		< Back Next > Cancel

Figure 3-19 Add a new vessel

Select an existing vessel from the drop down menu or click '*New*' to create a new vessel.

Add Local Vessel		<b>X</b>
Vessel		
vessel		
		New
	ОК	Cancel

Figure 3-20 Select existing or create a new vessel

When 'New' is clicked; enter a name for the new vessel and click 'Next'.

(By ticking the 'Use existing vessel as template' checkbox it is possible to use an existing vessel, as a template for the new vessel creation. Refer to the PDS2000 user manual for more details)



Vessel Name		×
The vessel will be say	/ed to disk.	
	Enter name for new vessel: BV vessel	
	Use existing vessel as template	
	< Back Next > Cancel	lelp

Figure 3-21 Enter name for new vessel

Click 'Next' to continue.



### 3.4.4.3 Vessel Geometry

Now the vessel geometry dialog box appears.

130011200011			Offsets				
🦻 Use Stand	dard Shape		Name	х	Y	Z	
(None)		-	Zero Offset	0.00	0.00	0.00	
Def	fine Standard Sl angth: 1.00 Wid Height: 1.0	hape Size th: 1.00 10					
Use Custo	om Shape						
-	Select Custom S 3D: 2D:	Shapes					
- Custum !	Shape - Vessel	contour					
	New	Edit					
essel	0						
raught	U	Squat table		Ϋ́			
Furn Radius		25					
Sea level (po center of gra	ositive above avity point)	0	Ad	d Re	move	Edit	
Center of gr	avity point offs	et. X,Y,Z				Overview	
0	0	0					
ssel vertica	I position						
DULIALE	- (001-1-)						

Figure 3-22 Geometry

Height: 1.00

See above figure:

- A. Select 'Use standard shape' to use a standard vessel shape. Click
  Define Standard Shape Size
  Length: 1.00 Width: 1.00
  - to define the dimensions.
- B. Alternatively click 'Use Custom shape' when a DXF,Sketchup or 3D studio drawing of the vessel is available. Click
  Select Custom Shapes

to select the drawing. Refer to the PDS2000 user manual for more details.

C. Equipment offsets with respect to a chosen vessel reference point (zero offset) needs to be defined. Click 'Add' to add an offset. In the appeared dialog: enter a name and define the X,Y and Z offset with respect to the vessel reference point.



Offset	×
Name:	GPS
X:	1
Y:	-1.5
Z:	4
	OK Cancel

Be aware of the used convention. Refer to the PDS2000 user manual for more details.





Click 'Next' to continue when all offsets are defined.



### 3.4.4.4 Equipment

In the next dialog box the used equipment must be defined. It depends of the user's used devices and configuration what needs to be selected.

In this basic setup we will use a GPS, heading sensor, motion sensor, Sound Velocity probe and the BlueView sonar.

#### **BlueView Sonar:**

It depends of the used sonar which device should be selected.

- Multibeam all options. For BlueView bathymetric sonars.
- Sonar Image Fwd Looker: For BlueView forward looker sonar systems.

Multibeam all Options:

eometry Equipment	Computations	Data Sources	Guidance	Tools	Logging	Simulation	Aliases A	larms	
Groups: Interferometry Laser Scan Magnetometer Meteorologic Multibeam Multibeam (All Opt Output Positioning system Device drivers: Blue View pipe pos RESON HydroBat RESON SeaBat 7 RESON SeaBat 7	ions) Geogs wition monitor k k Fwd Looker		Add Remo Add S Syste Chan Syste	ve ub m ge		Multibeam Multibear Sonar Cor Blue View Sonar BIT Sonar Ima Blue View Sonar Off	(1) - BlueVie n xyz comput n area comp rfiguration(1) sonar-cfg] E(1) - BlueVi ge Fwd Lool img-fls] fset Position	w Profile[mbs] tation - ew[bite] cer(1) -	Port COM1 COM1 COM1 COM1
						Edit I/O Por	Units	Outp Device Tes	uts st
							OK	Cancel	Help

Figure 3-24 Equipment

See above figure.

A. Select the proper group. E.g. Multibeam (All Options) to add the BlueView sonar



B. Select the correct Device driver. E.g. BlueView for the BlueView sonar.

### C. Click 'Add'

A dialog appears in which the required options could be selected by ticking the checkboxes.



- Multibeam(1)-Blueview Profile[mbs] is needed to display/record the sonar profile data.

- Sonar Image Fwd Looker(1) –BlueView[mg] is needed to display/record the sonar forward looking data.

- Sonar Configuration(1)-BlueView[sonar-cfg] is needed to configure/control the sonar with PDS2000.

- Sonar BITE(1)-BlueView[bte] is needed to display/record BITE (Built In Test Environment) information form the sonar. Currently this only contains the sonar temperature.

Click 'Ok' to continue.

D. The selected device is listed.

#### Sonar Image Fwd Looker:

This device is used when the sonar is a forward looker sonar and there isn't bathymetric data generated.



Vessel - BlueView[Multibeam Survey]			×
Geometry Equipment Computations Data Sources	Guidance Tools	Logging Simulation Aliases Alarms	
Geometry Equipment Computations Data Sources Groups: Sonar BITE Sonar Configuration Sonar Pipe Detections Sonar Pipe Detections Sonar Velocity Sound Velocity Profile Sound Velocity Profile Source drivers: B Source B Sou	Add >       Add sub       System       Change       System	Logging     Simulation     Aliases     Alarms         Device         Sonar Image Fwd Looker(1) -         Blue View[img:fls]         Sonar Offset Position         D         C	Port COM1
		I/O Port Device Test	
		OK Cancel	Help

Figure 3-25 Equipment – Sonar Image Fwd Looker

A. Select the 'sonar Image Fwd Looker" device group.

- B. Select the BlueView Device driver.
- C. Click 'Add'.
- D. The Device is added to the list.

The Sonar Image Fwd Looker device will log the sonar image by default (when logging is on), the bathy sonar will not log the image data by default.

#### Other equipment:

Follow the same procedure to add a GPS, heading, Sound velocity and motion sensor. The selected device driver depends of the user's equipment.

GPS devices are listed in the group 'position system Geogs',

Heading devices in the group 'Compass'

Motion sensors in the group 'VRU'



Sound Velocity in the group 'Sound Velocity'

When all devices are added to the equipment page the next step is to select the correct I/O port on which the device is connected to the computer running PDS2000. For the SonarView Sonar this will be a computer's Ethernet port. For the other devices normally serial connections are used but others are possible.

### 3.4.4.5 BlueView sonar I/O port

		Device	Port
Automatic Identification System	A E	Positioning system Geogs(1) - NMEA 2.30 GGA-GST [pos]	COM1
Bearing			
📈 Compass		Σ Reference Point Computation	
CTD Probe		Compass(1) - NMEA-HD I [hdg]	COMT
Density Probe		2 Heading computation	COMI
😥 Depth sensor		VRU(1) - ISS1[vru]	COMI
Device Messages	-	2 Attitude computation	COMI
T. n. i	·	Sonar Image(1) - Blue View[img]	COMI
Device drivers:		2 Sonar Offset Position	COM1
🧹 Generic		Blue View [sonar-cfg]	COMI
GeoSwath	Add >		
Gulf Cobla{11}			
Heerema Balder{136}	Remove		
HHRP2			
Honeywell HMR3000			
K IHC-DPM			
🖌 IXSEA OCTANS-TAH	Add Sub System		
🖌 ksea Phins Halliburton SAS	- System		
🖌 KT Penry Tritech ROV	E Change		
🖌 Kystverket Nyhavn HDT{53}	System		
🖌 Lehmkuhl-bin			
🖌 Manual-Input			
🖌 Navigat 2100			
🗾 NMEA PRDID			
NMEA PSAT HPR			
NMEA-HDG			
NMEA-HDT			
NMEA-HEHDT			
NMEA-HRC			
Novatel SPAN			_
CceanModules ROV		Edit Units Outputs	
Octans	-	I/U Port Device Lest	

Figure 3-26 I/O port selection

See above figure.

- A. Click the sonar device to setup the I/O port. E.g. the sonar image.
- B. Click 'I/O Port'.

An Interface dialog box appears.



nterfacing			Andrewson Print Company	×
Port	Settings			
	Add	move	ок	Cancel

Figure 3-27 Interface

When there are no ports defined the list is empty. Otherwise the available ports are listed and could be selected.

Click 'Add' to define a new port.

Enter a name and click 'Ok'.

New Network Port	X
Network port name:	OK Cancel

Figure 3-28 port Name

Enter as host address the IP number of the sonar. BlueView Sonar's default address is 192.168.1.45 (Refer to the BlueView ProViewer manual)

In	terfacing		1	-	And income	x
	Port	Settings	Host			
	BlueVie	BlueView		Address:	192.168.1.45	
			-			
		Add Remove			ОК	Cancel

Figure 3-29 Host address for Blueview Sonar

Click 'OK'.

When the port is created it could just selected from the list.



#### Click on the port and click 'Ok'.

In	terfacing				100	Auto Tarana	x
	Port	Settings		Host			
	BlueVie	BlueView 192, 168,	1.45		Address:	192.168.1.45	
		Add	Remove			ок	ancel

Figure 3-30 Existing port selection

All the sonar devices as selected in the Multibeam all options dialog must be set to the same port.

Device	Port
🖃 🗹 💏 Multibeam(1) - BlueView Profile[mbs]	BlueViev
Multibeam xyz computation	
Multibeam area computation	
🖃 🗹 💼 Sonar Image(1) - BlueView[img]	BlueViev
Sonar Offset Position	
Sonar Configuration(1) -	BlueViev
Sonar BITE(1) - Blue View [bite]	BlueViev

Figure 3-31 All sonar devices selected to the same port

#### 3.4.4.6 Other devices I/O selection

The same procedure is applicable when for example a serial port must be added/selected for a GPS.

Click at the GPS (Position system Geogs) in the device list and click I/O port.

ig system Geogs(1) - NMEA COM1   A-GST [pos]   Position from Geogs
Position from Geogs
ce Point Computation
(1) - NMEA-HDT[hdg] COM1
computation
TSS1[vru] COM1
computation
age(1) - BlueView[img] BlueView
ffset Position
nfiguration(1) - COM1


Port	Settings	<u> </u>	Senal port
COM10	9600 8-NONE-1		Bits per second: 38400 🗸
COM11	9600 8-NONE-1		
COM12	9600 8-NONE-3		Data bits: 8
COM13	9600 8-NONE-1		Parity: NONE
COM14	9600 8-NONE-1		Tone -
COM15	9600 8-NONE-1	Δ	Stop bits: 1
COM16	38400 8-NONE-1		TC autout flaw control
COM2	9600 8-NONE-1	7	
COM3	9600 8-NONE-1	· ·	Restore Defaults
COM4	9600 8-NONE-1		C
COM5	9600 8-NONE-1		
COM6	9600 8-NONE-1		
COM7	9600 8-NONE-1		
COM8	9600 8-NONE-1		
COM9	9600 8-NONE-1	_	
dd	RTA UDP 2020 ES R		

Figure 3-33 Serial I/O ports

See above figure.

- A. When there are already ports defined they could be selected from the list. Click at the required port (A)
- B. Alternatively the port could be created by clicking '*Add*' (B) and selecting the required port type: '*Serial*' for serial connections and '*Socket*' for Ethernet connections.

Socket OK
RTA RESON Remote IO BlueView

When 'Ok' is pressed a port number for the serial port or a name for the Ethernet port must be entered.

New Com Port	New Network Port
Com port number: OK	Network port name: OK
Cancel	Cancel

Use the same serial COM port number for serial ports as also used by Windows (E.g. Com1 or COM2 etc.) For the network port name any name could be entered.

Click '*OK*' again to continue. A dialog appears to configure the port. For a serial port the baud rate, data bits etc. must be set.



Inter	facing			1.00	×
Po	ort	Settings	•	Serial port	
C	OM1	38400 8-NONE-1		Bits per second:	4800 👻
C	OM 10	9600 8-NONE-1		Data bita	
C	OM11	9600 8-NONE-1		Data bits:	8 •
C	OM12	9600 8-NONE-3		Parity:	NO -
C	OM13	9600 8-NONE-1	=		
C	OM14	9600 8-NONE-1		Stop bits:	1
C	OM15	9600 8-NONE-1			CTS output flow control
C	OM 16	38400 8-NONE-1		030	cro ouput now condition
C	OM2	9600 8-NONE-1		Res	store Defaults
C	OM3	9600 8-NONE-1			
C	OM4	9600 8-NONE-1		5	-
C	OM44	4800 8-NO-1			
C	OM5	9600 8-NONE-1			
C	OM6	9600 8-NONE-1			
C	OM7	9600 8-NONE-1			
C	OM8	9600 8-NONE-1	-		
		Add	Remove		OK Cancel

In case of an Ethernet (socket) port the correct device IP address, port number etc. must be set. The host address is the device IP address. Some devices only output certain messages on a certain port number. This has to be set in that case as host port number. The local port number could normally be any number. It depends of the connected device if UDP/IP or TCP/IP must be selected.

Port	Settings		Local	Port	1000
10.4.1.48	UDP 1000 10.4.1.48			FUIL	1000
2222	UDP 2222 10.4.1.6:2222	=	Host		
3333	UDP 3333 10.4.1.48:3333	-		Addresse	10 4 1 49
5600	UDP 5600 localhost: 5600			Auuress.	10.7.1.10
5605	UDP 127.0.0.1:7000			Port:	0
5610	UDP 5610 127.0.0.1				
AHC_KA	UDP 8001 10.4.3.255:8001				Check host address
BlueVie	BlueView 192.168.1.45				
broadcast	UDP		Protocol		
COM1	38400 8-NONE-1				
COM10	9600 8-NONE-1		IP Multic	ast	
COM11	9600 8-NONE-1				Join muliticast
COM12	9600 8-NONE-3			_	
COM13	9600 8-NONE-1			Group:	
COM14	9600 8-NONE-1				
COM15	9600 8-NONE-1	-			

## 3.4.4.7 Offsets

The proper offsets must be selected for the GPS and sonar.

### <u>GPS:</u>

Double click at the device (Positioning system Geogs) to open the properties.





In the properties (see below figure) click:

- A. The Device offset field.
- B. And select the required offset. (As created in section 'Geometry' on page 21.)

Properties	×
Name Device Offset	Value (1)GPS X: 1.00 Y: -1.50 Z: 4.00
E Timestamp Mode	Time in Message
Time Delay [sec]	0
Time Computation Source	Data Source (1)Primary
Datum Transformation Source	Use project coordinate system
Reject GPS Mode "None"	Disabled
Processing Interpolation Gap Check	Enabled
Maximum Gap Time	5
Device Standard Deviations	
SDEV of xyz offset(m)	0.02
BV vessel CPS Zero Offset	
ОК	Cancel Apply

Figure 3-35 Offset

Click 'Ok' when done.

### <u>Sonar</u>

Follow the same procedure for the sonar. Double click at the sonar device to open the properties.

and CTD Probe and Density Probe Depth sensor and Device Messages	-	Compass(1) - NMEA-HDT[hdg]	COM1 COM1
Device drivers:		Sonar Offset Position	
₩ Generic ₩ GeoSwath ₩ Gulf Cobla{11}	Add >	L	СОМ1
Figure 3-36 Sonar			

In the properties (see figure below):

- A. Click the 'device offset' field.
- B. and select the required offset as set in section 'Geometry' on page 21.



Properties	2
Name	Value
Head Id	1
Device Offset	(1)sonar X: 0.00 Y: 0.00 Z: 0.00
Heading Correction	0
Roll Correction	0 °PU+
Pitch Correction	0 °BU+
Data Logging	Disabled
BV vessel 	
ОК	Cancel Apply

Figure 3-37 Offset Sonar



Not all devices have a device offset to be defined. (E.g. a heading device), and therefore no device offset field is in the properties of such a device.

## 3.4.4.8 Roll/Pitch and Heading correction

In the properties of the devices such as the VRU, Sonar and Compass also the roll, pitch and/or heading correction must be set. These are the mounting offsets with respect to the vessel frame. In the below example a sonar is mounted with an angle of 45 degrees 'down' with respect to the vessel frame.

Properties	×
Name	Value
Device Offset	(1)bow
	X: 0.00 Y: 2.80
Heading Correction	<u></u>
Boll Correction	0 °PU+
Pitch Correction	-45 °BU+
Data Logging	Disabled
Pitch Correction	-45
l l	OK Cancel Apply

Figure 3-38 Example of sonar properties with a pitch correction of 45 degrees.



Be aware of the chosen convention. In the above example for the pitch it was defined as BU+ (bow up = positive) and for the roll PU+ (Port up positive). This is defined in the project configuration. See section 'Project configuration' on page 11 or refer to the PDS2000 user manual.



An equipment configuration could look like the example below:

Figure 3-39 Equipment Configuration

Click 'Next' to continue the wizard.



## 3.4.4.9 Computations

The computations dialog box appears. Here computations could be edited. This is not necessary.

Computations	X
Speed (Tracking point)         Speed (Tracking point)         Sealer (Tracking point)         Sealer (Tracking point)         Swappoint (Track	Advanced Edit
	< Back Next > Cancel Help

Figure 3-40 Computations



## 3.4.4.10 Data Sources

The 'Data Sources' dialog box appears.

a Sources			
Data sources:	Data groups:		
Blueview vessel     Sealevel     Speed     Position     Roll +Pitch +Heave     Heading	(1) - Sealevel (Reference point)		
Select primary data group for a da for switching. Data sources can b	Automatic switch ata source, set automatic selection more e selected for various computations an	Conditions le and the conditions d displays.	

Figure 3-41 Data Sources



### 3.4.4.11 Guidance

The '*Guidance*' dialog box appears. Here Runlines, Route and/or Waypoint files could be selected or created. Refer to the PDS2000 user manual and the PDS2000 Guidance Editor manual for more details.

Click *'Next'* to continue.

### 3.4.4.12 Logging

The '*Logging*' dialog box appears. Here the logging formats and conditions could be selected. The PDS2000 format is used and always selected. Refer to the PDS2000 user manual for more details.

Logging		×
Logging File formats PDS2000 Format PDS2000 Grid Model WinFrog Format Cleaned XYZ data XTF Format Backscatter Grid Model C'2 Exempt	Log directory: LogData  Log space System required free disk space [MB]: 100 Minimum free disk space warning [MB]: 0 Allowed log space warning [MB]: 0 Conditions Condition check Guidance online condition Inside clipping polygon No user alarms User conditions Define Create new log file Create new log file After logging 0 hours and 0 minutes	X
	< <u>B</u> ack <u>N</u> ext > Cancel	Help
	< <u>B</u> ack <u>N</u> ext > Cancel	Help

Figure 3-42 Logging



# 3.4.4.13 Single beam simulation

The single beam simulation dialog box appears.

Simulation	×
Vessel position Depth	
Grid X: Channel 1: 0	
Grid Y: 0 Channel 2: 0	
Grid Z: 0 Channel 3: 0	
Heading Speed	
Heading true: 0 Speed: 0	
Vru Simulate using runlines	
Max. heave: 0 I Use runlines	
Max. roll: 0 Automatic mode	
Max. pitch: 0	
Multibeam noise	
< Back Next > Cancel	Help

Figure 3-43 Simulation



#### 3.4.4.14 Aliases

The Aliases dialog box appears. Here aliases could be defined for the different used drivers. Refer to the PDS2000 user manual for more details.

Aliases				×
تعتبر المعالم ا المعالم المعالم المعالم المعالم المعالم	ment ostitoning system Geogs(1) - NMEA 2.30 GGA-GST [pos] ompass(1) - NMEA-HDT[hdg] RU(1) - TSS1[vru] onar Image(1) - BlueView[mg] onar Configuration(1) - BlueView[sonar-cfg]			
Group:	Positioning system Geogs			
Driver:	NMEA 2.30 GGA-GST [pos]			
Alias:	Positioning system Geogs(1) - NMEA 2.30 GGA-GST [pos]			
		< Back Next >	Cancel	Help

Figure 3-44 Aliases



### 3.4.4.15 Alarms

The 'Alarms' dialog box appears. Here alarms could be defined. Refer to the PDS2000 user manual for more details.

Alarms					<b>—</b> X
Vessel alarms Blueview vesse	Edit New				
Device alarms					
Name	Device	S	everity Actions		
Edit					
		< B	ack Finish	Cancel	Help

Figure 3-45 Alarms

Click 'Finish' to finish the vessel configuration wizard.

Add Local Vessel	×
Vessel	]
Blueview vessel	•
	New
	OK Cancel

Figure 3-46 Vessel

Click 'OK to confirm the vessel. The vessel is now listed.



els			×
Type	ID 1	Vessel Blueview vessel[Multibeam Survey]	Local Add Edit Remote Add Edit Remove
		< Back	Next > Cancel

Figure 3-47 Selected vessel

Click 'Next'.

## 3.4.4.16 Layouts

The 'Layouts' dialog box appears.

Besides the acquisition display it is also possible to create and add presentation displays. On this way multiple displays connected to the computer could have its unique display layout. It is easier to do this from the PDS2000 Control Center.

Lay	outs				×
	Module	Computer	Layout	UI Profile	
	Control Center	[Local Computer]	N/A	Default[Master]	
	Acquisition Server	[Local Computer]	Program Default[AcqComp]	Default[AcqComp]	
					Add
					Remove
					Edit
_					
			<	Back Next >	Cancel





### 3.4.4.17 Events

The 'Events' dialog box appears. Here events could be defined. Refer to the PDS2000 user manual for more details.

Enable eventing	Numbering Follow Loggin	g Enable	Duck In Har
<ul> <li>Time</li> </ul>	Time interval [sec]:	60	Generate manual event
Distance	Distance interval:	100	n. a
🔘 Line	Line distance interval:	100	]
	Conditions		
Event definition:			Edit New

Figure 3-49 Events

Click 'Next' to continue.

### 3.4.4.18 Alarms

The 'Alarms' dialog box appears. Here alarms could be defined. Refer to the PDS2000 user manual for more details.

irms	_	_	
Name	Severity	Actions	Edit Add Remove Rename
			< Back Finish Cancel



Click 'Finish' to finish the configuration wizard.



Wizard is Finished	×
The project wizard has finished.	
Please press the 'Finish' button below to return to the Control Center.	
	Finish Cancel



The wizard is finished and the PDS2000 control Center will start.

Control Center - [Explorer]	
File Edit View System Acquisition Processing Tools Window Help	
/ Mon ( + / + / + / + / + / + / + / + / + / +	2 🖸 🔤 🔜 🖉 📾
Project:         Application type:         Configuration:           BlueView         ✓         Multibeam Survey         ✓         BV         ✓	Simulate Replay
Projects Common PDS2000 Project Log Data Multimedia Report Sonar Targets Camera Images	
Name 🔺	Size Date
E BlueView	
3D Models	
3D Objects	
Alams	
BSB Charts (KAP)	
Contour Definitions	
Figure 3-52 PDS2000 Control	l Center



# 3.4.5 Edit project settings

Project settings could be edited without running the wizard from the PDS2000 Control Center.

Click d to change the project configuration settings.

Contro	ol Center - [Explorer]				
POS File	Edit View System Acquisition	Processing To	ools Window Help		
-	R R R R R R R R R R R R R R R R R R R	sii 🖸 🗱 🗾	i 🕞 🕷 🗾 📥 📈 🕀	🗟 🔊 💽 🖉	0
Project:	Project Configuration - BlueView		lander (		×
BlueViev	Description				
Project	ئىك Units	Number:	default		
Name	Coordinate System     Formats	Name:	default		Cancel
	Tes Log Files	Task:	default		
	File History     Disk Space	Client:	default		
	Alert Sounds	Contractor:	default		
	Options				
	Sonar Target Parameters				
	🔼 Icon Images				



Project Configuration settings

Click is to change the configuration settings. Click 'Edit' to change the Vessel Configuration settings.



Figure 3-54 Configuration and Vessel configuration settings

# 3.5 Defining the Views

Next step is to define the Views.

There are many possibilities in the definition of the views; it all depends in the needs of the customer how to define.

It also depends if the customer uses the sonar image or sonar profile data. This depends of the sonar and the sonar configuration. The correct option should also be selected in PDS2000. See section 'Equipment' on page 23.

This section briefly describes the basic setup of the views used by the BlueView sonar. Refer to the PDS2000 user manual for more details.



# 3.5.1 Acquisition display

When the acquisition is started with pressing the Realtime button in the PDS2000 Control Center the acquisition display will appear.



When not opened at the screen the acquisition icon **the taskbar** must be clicked to open it.

When there are no Views defined the display is 'empty' with only a message View enabled as in below picture.



Figure 3-56 Acquisition with only Messages View

# 3.5.2 Sonar Configuration View

The PDS2000 Sonar configuration View is a View to control the sonar settings from PDS2000 during Acquisition. Refer to section 'Sonar configuration – BlueView View' for a description of this view at page 70.

The table below indicated how to add this View.



Step	Action
Step 1	Action In the Acquisition Display. Click 'Tools' > 'Equipment Control'. Click 'Tools' > 'Equipment Control'. Click 'Tools' > 'Equipment Control'. Messages File Edit View Guidance Logging Tools Window Help Messages File Edit View Guidance Logging Tools Window Help Calculator Vessel Backup Settings Import Grid Model Update Equipment Control Customize User Accounts
2	In the 'Add Equipment control display' dialog select 'Sonar Configuration – Blue View[sonar-cfg]' and click 'Add'
3	The sonar configuration view is added to the display.         Sonar Configuration(1) - BlueView[sona I I I I I I I I I I I I I I I I I I I



Step	Action					
4	Right click in the Views title bar to position the View in the display.					
	For example click ' <i>docked to</i> ' > ' <i>left</i> ' to dock in to the left side of the display. Refer to the PDS2000 user manual with a description of docking.					
	(It depends of course to the user needs where to locate the view in the display)					
	Sonar Configuration of					
	Sound speed Docked to Top MDI Child as					
5	Size the View to the required dimensions.					

# 3.5.3 Sonar Wedge View

The Sonar Wedge View displays the sonar wedge with the sonar data. The table below indicates a method to add this View. (Other methods are possible; refer to the PDS2000 user manual for more details.)

Step	Action
Step 1	Action In the Acquisition Display. Click 'View' > 'Add Display'. Acquisition - Sonar Configuration(1) - BlueView[sonar-cfc File Edit View Guidance Logging Tools Window Displays Ctrl+D Sonar Confi Add Display Lock Displays
	Image: Constraint of the system     Display Mode       0.0     ✓       0.0     ✓       Sound spe     ✓       ✓     ✓       O     ✓       O     ✓       O     ✓       O     ✓       Alerts       Show 3D Object Manager       Accept Alerts



Step	Action
2	Scroll in the ' <i>Add display</i> ' dialog box to the ' <i>Sonar</i> ' folder and click at ' <i>Wedge</i> ' to select it.
	Press 'Ok'.
	Add Display
	Online Water Column         Realtime Design Profile         Sonar         Snippets         Wedge         Sidescan         Dredge Flow/Concentration Meter         SCADA         Dredge Load and Draught         Name:         Sonar - Wedge         OK
3	The View is added at the layout.
•	
	Right click in the View's title bar to locate it in in the desired position.
	For example ' <i>Docked to</i> ' > ' <i>Top</i> ' to dock it at the top of the display.
	✓ Docked Floating MDI Child
	Top Left
	Bottom
	, ingrit
4	Size the View to the required dimensions.



# 3.5.4 Plan View Navigation

The Plan view navigation is a top view of the vessel and its location and could be used for navigation purposes. Additional information could be added to the view as a surveyed grid model, electronic navigation chart, sonar image wedge etc.

The below table indicates how to add the Plan View Navigation.

Step	Action
1	In the Acquisition Display. Click 'View' > 'Add Display'. Acquisition - Sonar Configuration(1) - BlueView[sonar-cfg File Edit View Guidance Logging Tools Window Displays Ctrl+D Sonar Confi Add Display Lock Displays Bisplay Mode 0.0 Sound spe Alerts Show 3D Object Manager Accept Alerts F10
2	Scroll in the 'Add display' dialog box to the 'Plan View' folder and click at 'Navigation' to select it. Press 'Ok'. Add Display Plan View Plan View Survey Coverage Navigation Dynamic Positioning Construction Operation Production Dredge Instruction OK Cancel
3	The View is added at the lay out.



Step	Action					
•	Plan View - Naviga (A) (A) (A) (A) (A) (A) (A) (A) (A) (A)	tion			20 + +	
4	Right click position. For exampl display.	in the V	iew's title bar red to' > 'Righ	to locate	it in in the it at the rig	desired ght of the
5	Size the vie	ew to the	e required din	nensions.		

## 3.5.4.1 Add Layer(s) to the Plan View Navigation

It is possible to add additional information to the Plan view navigation view. In PDS2000 this is done by the 'Layer control'.

Many layers could be added to the view. Refer to the PDS2000 user manual for more details.

## 3.5.4.2 Add Sonar Image Layer

The below table describes how to add a Sonar Image layer to the View.

Step	Action
1	In the Plan view Navigation view. Click at the Layer control icon.
2	In the appeared dialog box the current layers are shown and could be edited. Click <i>'Add'</i> to add a new layer.



Step	Action
	Layers     Layers     Layers     Active DXF Layer     Active Route Layer     Active Route Layer     Active Route Layer     Active Waypoint Layer     Active Waypoint Layer     Active Waypoint Layer     Active Route Layer
3	Click 'Sonar Image Layer' from the dialog box and click 'Ok' Add Layer Profile Position Layer Raster Layer Route Layer Route Layer Shape Layer Sonar Targets Layer Tide Station Layer User Map Layer Vessel Layer Work Area Layer OK Cancel
4	Now the wedge data is displayed in the view.
5	Repeat step 1-3 and select any additional required layer.

### 3.5.4.3 Add S-57 Chart layer to Plan View

An IHO standard S-57 electronic navigation chart could be added as a background layer to a Plan View such as the Plan view Navigation.

The S-57 chart layer is for reference purpose only. Use an approved Electronic Chart and display Information system (ECDIS) for safe navigation.

Many European countries publish free S-57 ENC charts for their inland waterways. For US waters all S-57 charts are available as free downloads at the NOAA OSC Website. (<u>http://www.nauticalcharts.noaa.gov</u>). The East Asia Hydrographic Commission provides free offshore S57 vector charts for the South China Sea area (<u>http://scsenc.eahc.asia/main.php</u>)

The table below describes the procedure to add an S-57 chart as background layer.





Step	Action
1	The available S-57 Charts needed to be copied in the current project
	Currently this could only be done by the windows explorer.
	Open the PDS2000 project in windows explorer and copy the S-57 folder with charts into it.
	Computer > Data (D:) > PD52000 project: > BlueView >
	Organize  Include in library  Share with  Burn New folder PDS2000 Project
	▷ 🔆 Favorites Name Date modified Type Size
	b libraries     Images     7/29/2014 1:20 PM     File folder       Camera Images     7/16/2014 4:26 PM     File folder       ENC_ROOT     ENC_ROOT     S57 folder     7/29/2014 1:18 PM
	Computer     LogData     With Charts 7/25/2014 9:33 AM File folder     Multimedia     7/16/2014 4:29 PM File folder
	Network     Projects Common Files     7/21/2014 3:18 PM     File folder     Reports     5/23/2014 11:28 AM     File folder
	SonarTargets 7/24/2014 12:28 PM File folder
	autocoltab_pt area 1X1.col 7/24/2014 8:11 AM COL File 15 KB
	autocoltab_pt area.col 7/24/2014 8:09 AM COL File 15 KB Backscatter processing.pcf 7/22/2014 2:35 PM PCE File 6 KB
2	Open the 'Layer control' of the plan view
3	Click in the Layers dialog box ' <i>Add</i> ' and select the 'S-57 Chart Layer'.
	لله العبودي
	Background Layers     Active DXF Layer     Active Route Layer     Active Route Layer     Active Route Layer     Active Waypoint Layer     Active Waypoint Layer     Active Wew     Vessel Layer     Vessel Layer     Add     Reference Point Computation     Color Table Layer     Active Rurlines     Active Rurlines     Active Rurlines     Active Rurlines     Active Rurlines     Active Rurlines     Activ
	+ + + + + + CK Cancel





The S-57 chart is now added as a background layer in the Plan view.



Figure 3-57 Plan view with S-57 chart added



# 3.5.5 3D View Online

The 3D View Online displays the vessel in a 3D environment.

Refer to the PDS2000 user manual for more details.

The below table indicates how to add this View.





### 3.6.1.1 Add a sonar wedge to the 3D View

In the View a sonar wedge could be shown. The table below describes the procedure.





## 3.6.1.2 Add a Multibeam layer to the 3D View

When BlueView profile data is used a Multibeam layer could be added to the View.

Perform step 1 to 3 as described in the above section but select now 'Multibeam Layer'.



Figure 3-58 Multibeam Layer added (red)

## 3.6.1.3 Add a grid model to the 3D View

In the view also a grid model could be shown as in the below picture.



Figure 3-59 3D View with Grid model

The table below briefly explains how to add a Grid model in a 3D View. The same procedure is applicable when a grid model needs to be added in for example a Plan view Navigation.



Step	Action
1	First of all the grid model needs to be available in the PDS2000 project.
	Grid model could be added in the project by the PDS2000 explorer.
	Open in the PDS2000 Control Center the PDS2000 explorer and click 'Project'
	Image: Second control Center - [Explorer]         Image: Second control Center - [Explor
	Project:     Application type:     Configuration:       BlueView     Multibeam Survey     BV       Projects Common     PDS2000     Project       Upg Data     Multimedia     Report       Sonar Targets     Camera Images
	Name       Image: State St
2	Current available Grid models are listed in the Grid models folder.
	Right click in the Grid model folder for a context menu.
	205 Control Center - [Explorer] 205 File Edit View System Acquisition Processing Tool
	Project: Application type: Configur BlueView
	Projects Common PDS2000 Project Log Data Multimedia Repor
	Name A
	□ 3D Objects B - □ Alams
	BSB Charts (KAP)
	Configurations
	CUBE Models     Design Profile Templates     Drawing Exchange Format (DXF) Drawings
	Crawing Exchange Format (DXF) Export Files     SSRI Shapes (SHP)
	GPS Excluded Areas Generic ASCII (ASC) Files Context menu GPS Exchange Format (GPX)
	Grid Model Filters
	for area     for area     Add Files
	Available project
	grid models g Standard (KML) files
	Encoding Standard (KMZ) files
L	



Step	Action				
3	By the context menu new grid models could be added to the project. Click <i>'Add files'</i> to add a grid model. Refer to the PDS2000 user manual for more details about grid models.				
4	Start Realtime from the PDS2000 Control Center.				
5	Click in the 3D View – Online the 'Layer Control icon'.				
6	Click in the dialog box 'Add' and select 'Grid Model Layer' followed by 'OK'.				
	Vessel Layer Cancel				











# 3.6.2 Raw data View standard

The Raw data standard view displays data from devices, computations and data sources.

The Raw data view is useful for fault analysis and adding data for Views as the numerical view. It is therefore not necessary to display always this view. Refer to the PDS2000 user manual for more details.

The table below indicated how to add the Raw Data View when needed.

Step	Action
1	In the Acquisition Display. Click 'View' > 'Add Display'. Acquisition - Sonar Configuration(1) - BlueView[sonar-cfc File Edit View Guidance Logging Tools Window © ③ Displays Ctrl+D Sonar Confi Add Display Range Display Mode 0.0 ✓ Toolbar Sound spe ✓ Status Bar Alerts Show 3D Object Manager Accept Alerts F10
2	Scroll in the 'Add display' dialog box to the 'Raw Data' folder and click at 'standard' to select it. Press 'Ok' Add Display I Production Dredge Instruction Dredge Instruction Standard Standard Standard I Helmsman I Raw Data - Standard I Helmsman I Raw Data - Standard



Step	Action	
3	The View is added to the display layout.	
4	Right click in the View's title bar to locate the view in the desired position. For example ' <i>Docked to'</i> > ' <i>left</i> ' to dock it at the left side of the display.	;
5	Size the view to the desired dimensions	



# 3.6.3 Numerical View

A Numerical view displays selected numerical values of computations, data sources or data from devices.

The table below describes briefly how to add a Numerical View.

Step	Action
1	In the Acquisition Display. Click ' <i>View</i> ' > ' <i>Add Display</i> '.
	Acquisition - Sonar Configuration(1) - BlueView[sonar-cfg         File       Edit       View         Guidance       Logging       Tools         Window       Displays       Ctrl+D         Sonar Confi       Add Display       Lock Displays         Range       Display Mode       ▶         0.0       ✓       Toolbar         Sound spe       ✓       Status Bar         ✓       Alerts       Show 3D Object Manager         Advance       Accept Alerts       F10
2	Select in the 'Add display' dialog box from the ' <i>Numerics</i> ' folder ' <i>Standard</i> '. Add Display Construction with 3 Bars Dredge/Construction Operation Production Dredge Instruction Production Standard Standard Standard Mumerics - Standard Mumerics - Standard Mumerics - Standard



Step	Action
3	The numeric view is now added in the screen lay out. The easiest method to add numerical values to the Numerical view is to drag a required value from the Raw Data view into the Numerical view.
	For example for the latitude, the positioning system > device data is opened in the raw data view.
	Raw Data - Standard       Image: Comparison of the system of
	A file name dialog is opened. Enter a name and click 'Save'
	Name       Size       Date Modified         Mame       0.2 KB       7/23/2014 11:47:16         File name:       AcqComp       Save         Cancel
4	And the latitude is added in the Numeric view.
	Latitude 066.0332°N



Step	Action		
5	Repeat step 3 to add all required values.		
	Numerics - Standard - [BV]		
	Latitude 066.0332°N Longitude 014.0188°E GPS mode GPS		
		6	Right Click in the Numeric view and select from the context menu ' <i>Properties</i> ' and/or ' <i>Edit page</i> ' to edit the page.
			Refer to the PDS2000 user manual for more details.

On this way a screen layout have been made.



Figure 3-60 Example of a screen layout


#### 3.6.4 Multibeam QC Views

When Blueview profile data is used Multibeam QC Views could also be added to the screen lay out.



Be aware of the BlueView profile data is not the same as Multibeam bathy data.

Select the Multibeam Blueview profile option in the equipment selection. See section 'Equipment' on page 23.

Use the same procedure as for the other Views to add it, but now select instead one of the views listed in the Multibeam QC folder.

Add Display	
Remote connections     Multibeam QC     Raw Profile + Total Propagation Error     Raw Profile     Total Propagation Errors     Vertical Waterfall     Backscatter Signal Strength Profile     Scatterplot     Standard	
Name:	
OK Cancel	

Figure 3-61 Multibeam QC Views

Refer to the PDS2000 user manual for a description of these Views.

#### 3.6.5 Save – Open Layout

It is possible to create different screen layouts.

Screen Layouts could be saved or opened by the Acquisition's 'File' context menu.



Figure 3-62 Open or save a Layout

When in a current layout changes are made they are automatically saved in the current Layout.

Refer to the PDS2000 user manual for full details about Screen Layout and Views.



#### 3.6.6 Presentation screens

When there are multiple monitors connected to the PDS2000 computer, each monitor could have his unique layout by creating 'Presentation screens' with a certain Screen Layout.

Open from the control Center the configuration layout window and click 'Add'.



Figure 3-63 Add a presentation

Click'Ok' and 'Ok' again.

When now Realtime is started from the PDS2000 Control Center besides an Acquisition screen also a Presentation screen is started.





Figure 3-64 Acquisition and Presentation screen

It might be necessary to start the presentation from the windows taskbar

by clicking the presentation icon.



Figure 3-65 windows taskabar with PDS2000, Acquisition and Presentation icon

Views could be added to the presentation wih the same procedures as used for the Acquisition. Layouts for the presentation could be saved and opened as for the Acquisition.



Give every layout a unique name.

The presentation could be dragged to the associated connected monitor. On this way more monitors could be provided with a screen layout.



# **4** Operate

# **4.1 Introduction**

When PDS2000 have been setup properly it is time to operate it. This section describes the main functions for the operation of the BlueView sonar and its associated views in PDS2000. More and different Views could be added to a PS2000 project. Refer to the PDS2000 user manual for detailed information. Data could be logged and replayed later in a PDS2000 project.

### 4.2 Views

A Screen Layout could look as the example below. Refer to section 'Defining the Views' on page 43 how to add Views.





Figure 4-1 Example of Screen layout

### 4.2.1 Sonar Configuration – BlueView View

Sonar Control Data Recordi	ng
Range	5.9 m
•	•
0.7	6.0
Sound speed	1540 m/s
•	
1400	1600
Advanced settings	
Gain	2.0 dB
•	۴
1.0	50.0
TVG	0.0 dB/m
•	۰.
0.0	10.0
Calculated ping rate	3.1 p/s
Ping delay	314 ms
•	+
0	999

Figure 4-2 Sonar configuration BlueView View



With the Sonar Configuration BlueView View, the user is able to control the BlueView sonar during Acquisition.

The view consists of two tabs: Sonar Control Data Recording

- Sonar Control
- Data Recording

#### 4.2.1.1 Sonar Control

Function	Description
Range 40.0 m < 1.0 40.0	Control of sonar Range with slider. The minimum range is determined by the minimum possible range of the sonar. (Depends of sonar specifications.)
Sound Speed Sound speed	When 'Manual from slider' (see below) is selected the sound velocity speed could be set with the slider.
Manual from slider Manual from slider	Select 'Manual from slider' to set the Sound Velocity manually with above slider.
Automatic from sensor	Select 'Automatic from sensor' to use the sound velocity value by a sound velocity (SV) sensor.
	This SV sensor must be selected and setup in the PDS2000 equipment page. See section Equipment on page 23
	The selection disables (greyed out) when the SV data is not available.
Advanced settings	Tick the 'Advanced' settings' checkbox to get additional control sliders.
Gain Gain 2.0 dB ( ) 1.0 50.0	Move the slider to change the Sonar's Gain setting.
TVG TVG 5.4 dB/m ( ).0 10.0	Move the slider to change the Sonar's TVG setting.
Ping delay Calculated ping rate 3.1 p/s Ping delay 314 ms	Use the slider to change the Sonar's ping rate. A ping delay value of 0 results in a maximum ping rate.



Function	Description
Alternate Ping	Alternate Ping is only available when the connected sonar can be set in this mode. With alternate ping unchecked the ping rate is higher but the imaging quality degraded.

#### 4.2.1.2 Data Recording

Recording control	
Synchronize with	h PDS logging
Start	Stop
Recording info	
File name:	
File size:	

Figure 4-3 Data Recording

Besides a PDS2000 log file also a ProViewer SON file could be logged from the received data.

Click 'Start' to start logging of a SON file.

Click 'Stop' to stop logging of a SON file.

Check the 'Synchronize with PDS logging' checkbox to start/stop logging of a SON file when the PDS2000 logging starts/stops.

The file name and file size is indicated.

#### 4.2.2 Sonar - Wedge View

This View can display bathy data and forward looker sonar data. It depends of the used sonar type which data type is displayed.



Figure 4-4 Sonar Wedge View with forward look sonar data



The BlueView sonar has a certain minimum start ranged. This range depends of the type of the connected BlueView sonar. This area is blanked in the wedge.



Figure 4-5 Minimum range

The view has the following toolbar.

<b>€                                    </b>	•   ⊘  🖬	□   @ @
Figure 4-6	Forward Looki	ng View's toolbar

The table below describes briefly the functions of the Toolbar.

Function	Description
Zoom ୧୧୦୦୦	Zoom in, zoom out and zoom extends function. It is also possible to zoom with the mouse wheel. (Click in the View and scroll the mouse wheel)
Contrast •-	<text></text>
Beam selection	Click the icon to become 'active'. A slider appears in the View with the beam number.







Function	Description
Layer control	Click the icon to open the the layer control properties. A dialog box appears.
	In this dialog box layers could be added,removed, disabled or edited. If for example the ' <i>Grid layer</i> ' checkbox is unchecked the view will be displayed without grid: ■ Avoidance - Forward Looking
	The info layer displays the sonar configuration settings on the top left of the view. The wedge layer displays the sonar wedge. The grid layer displays the sonar wedge. The grid layer displays the wedge grid. The action layer displays gates and sonar coverage/steering angles when availble from the sonar. (not applicable for blueview sonars)



Function	Description		
Layer properties	Click the icon to box appears.	change the properties. A d	ialog
	Properties		
	Name ; Sonar Image Data S	Value Ource Sonar Image(1) - BlueView(img]	
	Sonar Palette	Rust Red:192 Green:192 Blue:192	
	Background Color	Red:0, Green:0, Blue:0	
	Zoom Window Color	Red:255, Green:255, Blue:0     2.000000	
	Contrast	-2.000000	
	Gamma	-3.000000	
	Fort Name	Arial	
	Font Bold	Disabled	
	Font Italic	Disabled	
	<b>BlueView</b>		
	Equipment		
	in Sonar Image کو کو Device I	(1) - Blue View[img] Data	
		OK Cancel Apply	
	Different propert	ies could be set such as the	e Sonar
	When for examp be changed; Clic select from the b	le the Sonar Palette color r k the 'Sonar Palette' field a elow dropdown list the requ	needs to and uired
			1
	Name	Value	
	Sonar Image Data Source	sonar Image(1) - BlueView[img]	
	Sonar Palette	Rust	
	Background Color	Red: 192, Green: 192, Blue: 192 Red: 0, Green: 0, Blue: 0	
	Zoom Window Color	Red:255, Green:255, Blue:0	
	Brightness	2.000000	•
	Gamma	-3.000000	
	Font Name	Arial	
	Font Size	8 Disabled	
	Font Italic	Disabled	
	Sonar Palette	Rust	
		OK Cancel Apply	
	The Image will c	hange accordingly.	



#### 4.2.2.1 More Sonar Wedge Views in the screen

More sonar Wedge Views could be added to the screen layout. See section 'Sonar wedge View' on page 46how to add a Sonar Wedge View. With more Views, it is possible to zoom in, on one of the sonar wedge Views while the other still show the whole wedge with a outline indicating the zoom area.



Figure 4-7 Two Sonar Wedge views and zoomed in one of the Views.

As many Views could be added as the user requires.

#### 4.2.3 Plan View Navigation

This View could be used for navigation with additional information as the Sonar Image layer, Chart layer, Grid model layer etc.





Figure 4-8 Plan view Navigation

The Plan View Navigation has the following toolbar.

(a) Q, [2] 2 □ 6 2 (a) [b] 2 [b] 2 [c] 2 (c) [c] 2 (

The table below describes briefly the functions of this toolbar



Function	Description
Zoom	Zoom in, zoom out and zoom window.
<b>Q</b> Q <b></b>	It is also possible to zoom with the mouse wheel. (Click in the View and scroll the mouse wheel)
Pan £	Toggles the pan option on/off. When pan is active the pointer changes into the pan symbol. Keep the left mouse button clicked to move through the data. A right click in the View deactivates pan mode also.
Measure <sup> []]</sup>	Measure a distance by clicking on one location and move the cursor to the other location. A display appears with Distance and Bearing information. Measure From: 64.76 65.96 Bearing: 60.26° Click Distance to change the distance unit. Click the icon again or right click in the View to deactivate the measure mode.
Measure Rel. Vessel	Measure a distance between the mouse pointer and the selected tracking point.
	Distance         10.07 m         Bearing:         283.64°           +         +         +         +         +           +         +         +         +         +
	Click Distance to change the distance units. A right click in the View deactivates the measure mode.
Select symbol, set waypoint on symbol	These functions are applicable when a C-map chart layer is added. Refer to the PDS2000 user manual for more details.
DP mode and auto ranging	Used for DP (Dynamic Positioning) View. Not applicable for this application.
Create Sonar Target	When clicked a box could be drawn in the View around a target and a context menu for the target becomes available. See section 'Sonar target' or refer to the PDS2000 user manual for more details.



Function	Description
Follow vessel	When clicked the vessel will be always in the center of the Plan view. If not clicked the vessel moves out of the View.
Orientation mode	The orientation mode of the Plan view could selected by clicking this icon:
<u>~</u>	<ul> <li>North up: Plan view orientation always north up.</li> </ul>
	<ul> <li>Heading up: Heading of the vessel always up (top of view).</li> </ul>
	<ul> <li>Fixed skew: Plan view has a fixed orientation as set in the layer 'fixed skew' properties.</li> </ul>
	Properties
	Name Value ^
	Color Table Name
	Enabled
	Position Source     Tracking point     Attach To
	Always use active data Disabled
	Orientation Mode     Fixed Skew     Pixed Skew value     0
	Set Fixed Skew From Heading Disabled
	DP Mode Disabled
	Tuto hanging
	Fixed Skew value 0
Set fixed skew	When clicked and also as orientation mode 'Fixed
from heading	skew' is selected the actual heading of the vessel
Ŷ	will become the orientation mode of the Plan View.
Interactive	Click to select items in the plan view with the mouse.
Ø	
Edit mode	When checked and right clicked in the plan view a
17	context menu appears.
	Add new Waynoint
	Draw new Route
	Draw new Par/Cross Runlines
	Draw new Semi Parallel Runlines
	Draw new Area Runlines
	Waypoints, Routes or Runlines could be created in the plan View, Refer to the PDS2000 guidenee
	menual for more details
Undo, Redo	Undo or redo the last action in the edit mode.
2 0	
- ) (A	



Function	Description		
Show color table	Show the color table of an added grid model in the right side of the view.		
	+ + -245 -276 -307		
	-338 +369 -399 -430		
	-461 -492 + + -523		
	-554 -584 -615 -646		
	-677 -708		
Grid Model Color Mode	Different grid model color modes could be displayed. Refer to the PDS2000 user manual for more details.		
Coverage settings	Settings of the grid model. Refer to the PDS2000 user manual for more details.		
Edit Alarm	In the Plan View a numerical layer could be added. In this numerical layer an alarm could be defined.		
-	In the below example a Lat and Lon numerical layer is added to the Plan View.		
	Plan View - Navigation : ④, ④,    또 땐 6 · · · · · · · · · · · · · · · · · ·		
	₂₄at; 066.0390°N + Lon: 014.0076°E		
	2042810 + +		
	Refer to the PDS2000 user manual for more details.		



Function	Description		
Layer control	Click for the layer control dialog box.		
٠ د	Layers could be added or edited.		
	다 Layers	X	
		Ск Сапсе С С Сас С С С С С С С С С С С С С С С С	
Properties	Click for the Layers propert In the Sonar image layer th Image layer could be set. This could be useful when th background chart layer (as navigation chart) needs to be image.	ies dialog box. e transparency of the for example a a S57 electronic be visualized in the Sonar	
	Properties		
	Name Font Bold Font Italic Text Color Sonar Image Layer	Value Enabled Disabled Red:0, Green:0, Blue:0 BlueView - Sonar Image(1) - BlueViewfimp1	
	Senar Image Data Seuree	Sonar Image(1) - Blue View[img]	
		Blue-Teinow       Enabled       Red:128, Green:128, Blue:128       Blue-View       Red:255, Green:255, Blue:0       Red:255, Green:0, Blue:0       2       Outline	
	Attach to Button OK	Cancel Apply	



#### 4.2.3.1 Sonar Target

When the sonar target icon ' $\Box$ ' is pressed from the Plan Views toolbar a box could be drawn in the view.

When the box is drawn around the target a context menu including a GeoTIFF of the target becomes available. Some fields of the context are editable by clicking on it.

	n View - Navigatio		×
0 Q 🔍 Q	🔊 m m +   🛛	日間	
2163 +	+	+	
2162 +	+	+	
2102			
+	+	+	
2161			
1.1			
247	248	249	
513	.15		
Sonar target info Single click on an	editable cell.		
Sonar target info Single click on an o	editable cell. Value		
Sonar target info Single click on an Data FileName	editable cell. Value BlueView		
Sonar target info Single dick on an Data FileName TargetID	editable cell. Value BlueView 21		
Sonar target info Single click on an Data FileName TargetID PingNo	editable cell. Value BlueView 21 0		
Sonar target info Single dick on an o Data FileName TargetID PingNo TimeStamp	editable cell. Value BlueView 21 0 8/14/2014 9:38:16	5 AM	
Sonar target info Single click on an o Data FileName TargetID PingNo TimeStamp GeoTIFF	editable cell. Value BlueView 21 0 8/14/2014 9:38:16 20140814-093816	5 AM	
Sonar target info Single click on an o Data FileName TargetID PingNo TimeStamp GeoTIFF TargetX	editable cell. Value BlueView 21 0 8/14/2014 9:38:16 20140814-093816 551248.06 m	5 AM	
Sonar target info Single click on an o Data FileName TargetID PingNo TimeStamp GeoTIFF TargetX TargetY	editable cell. Value BlueView 21 0 8/14/2014 9:38:16 20140814-093816 551248.06 m 2042161.69 m	5 AM	
Sonar target info Single click on an o Data FileName TargetID PingNo TimeStamp GeoTIFF TargetX TargetY TargetZ	editable cell. Value BlueView 21 0 8/14/2014 9:38:16 20140814-093816 551248.06 m 2042161.69 m 0.00 m	5 AM	
Sonar target info Single click on an o Data FileName TargetID PingNo TimeStamp GeoTIFF TargetX TargetY TargetZ Latitude	editable cell. Value BlueView 21 0 8/14/2014 9:38:16 20140814-093816 551248.06 m 2042161.69 m 0.00 m 066.0331*N	5 AM	
Sonar target info Single click on an o Data FileName TargetID PingNo TimeStamp GeoTIFF TargetX TargetY TargetZ Latitude Longitude	editable cell. Value BlueView 21 0 8/14/2014 9:38:16 20140814-093816 551248.06 m 2042161.69 m 0.00 m 066.0331°N 014.0078°E	S AM	
Sonar target info Single dick on an o Data FileName TargetID PingNo TimeStamp GeoTIFF TargetX TargetX TargetZ Latitude Longitude Heading	editable cell. Value BlueView 21 0 8/14/2014 9:38:16 20140814-093816 551248.06 m 2042161.69 m 0.00 m 066.0331°N 014.0078°E 0.00°	S AM	
Sonar target info Single dick on an o Data FileName TargetID PingNo TimeStamp GeoTIFF TargetX TargetX TargetZ Latitude Longitude Heading Name	editable cell. Value BlueView 21 0 8/14/2014 9:38:16 20140814-093816 551248.06 m 2042161.69 m 0.00 m 066.0331*N 014.0078*E 0.00°	5 AM	
Sonar target info Single dick on an o Data FileName TargetID PingNo TimeStamp GeoTIFF TargetX TargetZ Latitude Longitude Heading Name Classification	editable cell. Value BlueView 21 0 8/14/2014 9:38:16 20140814-093816 551248.06 m 2042161.69 m 0.00 m 066.0331*N 014.0078*E 0.00° 1	5 AM	
Sonar target info Single dick on an o Data FileName TargetID PingNo TimeStamp GeoTIFF TargetX TargetZ Latitude Longitude Heading Name Classification Symbol	editable cell. Value BlueView 21 0 8/14/2014 9:38:16 20140814-093816 551248.06 m 2042161.69 m 0.00 m 066.0331°N 014.0078°E 0.00° 1 0	5 AM	
Sonar target info Single dick on an o Data FileName TargetID PingNo TimeStamp GeoTIFF TargetX TargetY TargetZ Latitude Longitude Heading Name Classification Symbol Length	editable cell. Value BlueView 21 0 8/14/2014 9:38:16 20140814-093816 551248.06 m 2042161.69 m 0.00 m 066.0331°N 014.0078°E 0.00° 1 1 0.00 m 0.00 m	5 AM tif	
Sonar target info Single dick on an o Data FileName TargetID PingNo TimeStamp GeoTIFF TargetX TargetY TargetZ Latitude Longitude Heading Name Classification Symbol Length Width	editable cell. Value Blue View 21 0 8/14/2014 9:38:16 20140814-093816 551248.06 m 2042161.69 m 0.00 m 066.0331°N 014.0078°E 0.00° 1 1 0.00 m 0.00 m 0.00 m	5 AM	
Sonar target info Single dick on an o Data FileName TargetID PingNo TimeStamp GeoTIFF TargetX TargetY TargetZ Latitude Longitude Heading Name Classification Symbol Length Width Height	editable cell. Value BlueView 21 0 8/14/2014 9:38:16 20140814-093816 551248.06 m 2042161.69 m 0.00 m 066.0331°N 014.0078°E 0.00° 1 1 0.00 m 0.00 m 0.00 m	5 AM	
Sonar target info Single dick on an o Data FileName TargetID PingNo TimeStamp GeoTIFF TargetX TargetY TargetZ Latitude Longitude Heading Name Classification Symbol Length Width Height Description	editable cell. Value Blue View 21 0 8/14/2014 9:38:16 20140814-093816 551248.06 m 2042161.69 m 0.00 m 066.0331°N 014.0078°E 0.00° 1 1 0.00 m 0.00 m 0.00 m	5 AM	
Sonar target info Single dick on an o Data FileName TargetID PingNo TimeStamp GeoTIFF TargetX TargetY TargetZ Latitude Longitude Heading Name Classification Symbol Length Width Height Description	editable cell. Value Blue View 21 0 8/14/2014 9:38:16 20140814-093816 551248.06 m 2042161.69 m 0.00 m 066.0331°N 014.0078°E 0.00° 1 1 0.00 m 0.00 m 0.00 m	S AM tif	

Figure 4-10 Sonar target context menu.

A Numerics Sonar Targets View consisting of a table with created sonar targets could be added in the screen layout.

Plan View	+	30°
Numerics	+	Sonar Targets View
Raw Data	۰.	Standard
Time Series		

Figure 4-11 Adding Sonar Targets View



#### 4.2.4 3D View online

This View displays a 3D View from the vessel with the data.



Figure 4-12 3D View Online

The following toolbar is used for the 3D view online.

≝ 🕂 🔤   □   📑 🗳 - 🔗   🗗 😭	�. Q. Q.  ∕] ♂ + 📾
---------------------------	--------------------

Figure 4-13 Tool bar

The table below describes briefly the functions of the tool bar.

Function	Description
Zoom କ୍ର୍ପ୍	Zoom in, zoom out and zoom extends. It is also possible to zoom with the mouse wheel. (Click in the View and scroll the mouse wheel)
Follow vessel	When clicked the vessel will be always in the center of the Plan view. If not clicked the vessel
Show spotlight	In the appeared window the light source can be moved by moving the yellow dot in the circle.



Function	Description		
Measure	Measure a distance by clicking on one location and move the cursor to the other location. A display appears with Distance, Bearing and Elevation.		
	Measure       To:         \$551546.04       \$551545.21         Distance       2.20 m         Altitude:       -699.95 m         -701.57 m       Elevation:         4/titude:       to change the distance units.         Right click in the view to deactivate the measurement function.		
Grid Axis layer +	Show coordinate axis system		
Save Snapshot	Take snapshot of the View. A dialog appears to define the file name and location		
Create Sonar Target	When clicked a box could be drawn in the View around a target and a context menu for the target becomes available. Refer to the PDS2000 user manual for more details.		
Show Color table	Show the color table of an added grid model in the right side of the view		
Grid Model Color Mode ≝≁	Different grid model color modes could be displayed. Refer to the PDS2000 user manual for more details		
Coverage settings	Settings of the grid model. Refer to the PDS2000 user manual for more details.		
Ð	Click for the Layer control dialog box		
Properties	Click for the layer properties dialog box.		



#### 4.2.5 Raw Data Standard View

This View displays the sensor data, the computations and the data sources.



Figure 4-14 Raw Data – standard View

This View could be used for fault analysis. If there are no problems with the data all the items (including the computations) have the sign  $\checkmark$ 

Refer to the PDS2000 user manual for full details.

Device properties are available by a double click on the computation and device data.

In this View also the BlueView's BITE data is available. This data could be used to define an alarm or for example a time series View.

j \_\_\_\_\_ ⊡\_;;;;; Sonar BITE(1) - BlueView[bite] \_\_\_\_\_;;; Device Data

Figure 4-15 BITE



# 4.3 Logging

All available data could be logged in a PDS2000 log file.

Log conditions could be set in the logging page during the project configuration or by the 'vessel configuration' > 'logging' window.

(Click from the Control Center's menu bar 'Acquisition'>'Configuration'>'Edit'>'Logging')

Figure 4-16 Logging

Refer to the PDS2000 user manual for more details.

The PDS2000 format will always be logged. The other formats are not applicable for this application.

The SonarView Image and configuration data logging could be optional switch on or off. When switch off the data will not be logged in the PDS2000 log file and could therefore not be replayed!

Double click for this in the Raw Data view (See 'Raw Data view' on page 60 ) Sonar Image device data. Check if the logging is enabled if logging of image data is required. See the pictures below.



Raw Data - Standard		
Raw Data - Standard         BlueView         Equipment         Positioning system Geogs(1) - NME.         Positioning compass(1) - NMEA-HDT[hdg]         Position Device Data         Position Computation         Position Computation         Position Position         Position Position Position         Position Position Position         Position Position         Position Position         Position Position         Position Position         Position Position         Position Position         Position Position         Position Position         Position Position         Position Position         Position Position         Position Position         Position Position         Position Position         Position Position         Position Position         Position	✓ Data Buffer         Vessel:       BlueView         Group:       Sonar Image         Name:       Sonar Image(1) - BlueView[Img         ✓       Data Block       7/24/2014 1:25:         ✓       Time       7/24/2014 1:25:         ✓       Time       7/24/2014 1:25:         ✓       Time       7/24/2014 1:25:         ✓       Timage Width       0         ✓       Mage Data       0         ✓       Mage Data       0         ✓       Beam Angles       0         ✓       Properties       0	
Sonar Offset Position	Name V Device Offset (C Y Heading Correction 0 Roll Correction 0 Pitch Correction 4 Data Logging E	alue ()bow : 0.00 : 2.80 : 0.50 *PU+ I5 *BU+ mabled
	Data Logging           Attach to Button         OK	Cancel Apply

Figure 4-17 Data logging on Image sonar

By default Image data logging is on when a Sonar Image Fwd Looker device was selected in the configuration. (Forward looker sonars only.) For the multibeam (all options) device it is by default off.

Check the same for the Sonar configuration.



Raw Data - Standard		
Raw Data - Standard         BlueView         Equipment         Sign Device Data         Sonar BITE(1) - BlueView[img]         Sign Device Data         Sign Device Data	V       Data Buffer         Vessel:       BlueView         Group:       Sonar Configuration         Name:       Sonar Configuration(1) - BlueView[s         V       Data Block       7/24/2014 1:21:36.855         V       Ping number       574         V       Time       7/24/2014 1:21:36.855 PM         V       Range       6.00	onar-cfg] 5 PM
	Data Logging Attach to Button OK	Cancel Apply

Figure 4-18 Sonar Configuration data logging

#### 4.3.1.1 Enable/disable PDS2000 Logging

The PDS2000 logging could be enabled during acquisition on different ways:

- Click at LOG at the right lower corner of the Acquisition. The color becomes green as indication logging is on LOG... when clicked again the logging stops and the color is red again.
- Click at the Acquisiton's toolbar logging icon . The LOG indicator at the right lower corener of the Acquisition will be come green as indication logging is switched on LOG. When clicked again the logging stops and the color is red again.
- Or alternatively by the Acquistion's Menu bar by the Logging menu.





# 4.4 Replay of PDS2000 Log files

PDS2000 Log files could be replayed. The log files must be available in a correctly defined pds2000 project such as the used pds2000 project or a project created from the log file. Refer to the PDS2000 user manual for more details. Use the PDS2000 explorer to copy log files into the project when not available.

Right click at 'PDS2000 log data' for a context menu and select '*Add Files*'.



Figure 4-19 Add log files into a (correct defined) pds2000 project

Click 'Replay' from the PDS2000 Control Center.









Figure 4-21 Replayer

A 'File Set' needs to be selected or created with the log files to be replayed.

In the Replayer, click to select an existing file set.

Click <sup>•</sup> to create a new file set or edit an existing file set.

The File Set Editor dialog box appears.

File Set Editor		×
File Sets ElueView	Files 20140627_121647_BlueView	OK Cancel
		New Delete Edit

Figure 4-22 file Set Editor

Click New to create a new file set or Edit to edit an existing file set.

In the below example a file set is created with two log files (the last two) selected.



escription	Start Date 🔺	Size	Directory
BlueView			
🖮 🔀 Multibeam Survey			
Logged			
20140627_111716_BlueView	6/27/2014 11:17:16 AM	118 KB	LogData
20140627_112530_BlueView	6/27/2014 11:25:30 AM	185 KB	LogData
20140627_112933_BlueView	6/27/2014 11:29:33 AM	141 KB	LogData
20140627_112937_BlueView	6/27/2014 11:29:37 AM	3.2 MB	LogData
20140724_133241_Blue\/iew	7/24/2014 1·32·41 PM	429 KB	LogData
20140724_142726_BlueView	7/24/2014 2:27:26 PM	1.1 MB	LogData
20140724_143019_BlueView	7/24/2014 2:30:19 PM	295 KB	LogData
			1

Figure 4-23 Files

When a file set is selected or created the Replayer will start with a screen layout as defined by the user. Defining views is the same as in Realtime. See section 'Defining Views' on page 43.



Figure 4-24 Replay with screen layout

Use Slow Fast to start, stop, pauze etc. the replay of data and to control the speed of the replayed data.

Use I be to select the next or previous file from the file set.



Refer to the PDS2000 user manual for a full description of the PDS2000 Replayer.

# 4.5 Import BlueView sonar data files (\*.SON)

It is possible to import the BlueView format sonar files (\*.SON) into PDS2000 to convert into a PDS file (.PDS).

When it is converted into a PDS file it is possible to replay or process this data file with PDS2000.

The table below describes the procedure to import BlueView SON sonar data file(s)

Step	Action
1	Click the PDS2000 control Center's 'Import' icon.
2	The PDS2000 import wizard starts.         Select in the dialog box 'BlueView Son Import'         Select Tool         Import         SX Import         Synthetic and the synthesis         Open existing config file:         Open existing:         Open existing:



Step	Action				
3	In the next dial added to the In	og box the SON nporter.	I files to be impo	orted mus	t be
	Click 'Add'				
	File       View       Help         Image: Constraint of the section in the sectio	Intitled - Import		Add Delete Delete A	
4	Browse to, Sel dialog box'.	ect and Open th	e files in the 'Fi	lle selection	on
	Select GeoSwath Import Files				×
	BlueView			Search LogData	P
	Organize   New folder			8	- [] (2)
	* Favorites	Name	Date modified	Туре	Size ^
		22_22_18_19.son	3/22/2014 11:21 PM	SON File	422,068 KB
	🕽 Libraries	22_22_23_47.son 22_22_27_39.son	3/22/2014 11:27 PM 3/22/2014 11:31 PM	SON File SON File	488,356 KB 488,468 KB
	🖳 Computer	22_22_31_28.son	3/22/2014 11:35 PM	SON File	488,376 KB ⋿
	Network	22_22_35_16.son	3/22/2014 11:39 PM 3/22/2014 11:42 PM	SON File SON File	488,392 KB
	- Network	22_22_42_54.son	3/22/2014 11:46 PM	SON File	488,364 KB
		22_22_46_43.son	3/22/2014 11:50 PM	SON File	488,436 KB
		22_22_54_22.son	3/22/2014 11:55 PM	SON File	400,500 KB 107,916 KB +
		•	m		•
	File name	:: "22_22_54_22.son" "22_22_39_03.so	n" "22_22_42_54.son" "22_22_46_4 🔻	BlueView .son Files	(*.son) 🔻
				Open	Cancel
	1				



Step	Action
<b>Step</b> 5	Action The selected files are now listed in the Import dialog box. Click 'Import' to import the selected files. BlueView Son Import: Untitled - Import File View Help BlueView Son Import: Untitled File selection: 22,22,39,03.son 22,22,45,43.son 22,23,45,43.son 22,23,45,43.son 22,23,45,43.son 22,23,45,43.son 22,23,45,43.son 22,23,45,43.son 22,23,45,43.son 22,23,45,43.son 23,45,43.son 24,45,43.son 24,45,43.son 24,45,43.son 24,45,43.son 24,45,43.son 24,45,43.son 24,45,43.son
	Import only valid points  Ready



Step	Action
6	A dialog box appears.
<b>Step</b> 6	Import
	BlueView Import Settings
	Position Offset (X,Y,Z) 0 0 0
	Attitude Offset (X,Y,Z) 0 0 0
	Roll correction (PU+) 0
	Pitch correction (BD+) 0
	Yaw correction 0
	Multibeam
	Offset (X,Y,Z) 0 0 0
	Roll mounting (PU+) 0
	Pitch mounting (BD+) 0
	Yaw mounting 0
	Sealevel
	sealevel
	Load from file Save to file
	Apply to all files OK Cancel
	At the moment of writing this box is always displayed. It contains the sensor offset(s) as set in the BlueView sonar file.
	When values are missing (0) (Because for example they were not in the blueView) they have to be set manually in this box by the operator.
	Click Save to file to save the settings into a file for possible future use in other SON files.
	Click Load from file to load a file containing these settings.
	Check the ' <i>Apply to all files</i> ' box Apply to all files to apply the settings as listed/set for all the selected SON files.



Step	Action
7	The Import starts.
	The progress of the import is indicated by a bar.
	Progress
	Step 1 of 5: 22_22_39_03.son
	Cancel
8	Close the Import module when the files are successfully imported.
9	Now the files are available as pds log files.
	They are located in the PDS explorer's, Log Data tab, PDS2000 Log Data folder.
	555 Control Center - [Explorer] 558 File Edit View System Acauisition Processing Tools Window Help
	- 🔤 🔊 🍂   🕸 🐻 🗖 🖾 🖉 🐻 📓 🖉 👍 🕅 🎉 🖧
	Project: Application type: Configuration:
	Projects Common PDS2000 Project Log Data Multimedia Peport Sonar Targets Camera Images
	E CogData
	Blue View Sonar Log Data     Cleaned XYZ Log Data     Cleaned XYZ Log Data     Cleaned XYZ Log Data
	Comma deplaced values (CSV) mes     Dredge Track Log Data     Event Log Data
	- eXtended Triton Format (XTF) Log Data
	- Generic Sensor Format (GSF) Log Data
	Blue View Blue View Import 22_22_39_03
	S7k Log Data      S7k Defining Structure (SDS) Log Data
	- Seir Beining Subclute (SDS) Eig Bata
	UKOOA P1/90 Log Data
10	The PDS log data files could be used in the PDS2000
	processing and replay modules. Refer to section 'Replay of
	to the PDS2000 user manual for a full description of the
	processing/editing and replay modules.

#### 4.5.1 Editing a file

With the PDS2000 editor and grid model editor PDS2000 files could be edited and a grid model could be created.

For the BlueView SON files it means they first need to be converted to PDS2000 log files by the PDS Import module. See above section 'Import Blueview sonar data files (\*.SON). After this the PDS2000 editor or grid



model editor is started and the files selected. The full procedure is beyond the contents of this manual.

Refer to the PDS2000 user manual for a full description of the PDS2000 Editor and Grid Model Editor.



# **5 Appendix Installing PDS2000**

# **5.1 Introduction**

This section is a copy from the PDS2000 user manual describing the installation of the PDS2000 software package.

# 5.2 Install PDS2000

The PDS2000 software is distributed on a CD-Rom. This CD is written according the ISO-9660 standard and can be read from nearly all CD-Rom stations.



A new version of PDS2000 is always available on the ftp-site of RESON. The address is <u>ftp.reson.nl</u> with user name 'pds2000' and password 'getlatestversion'. See also the Help menu of the Control Center.

#### 5.2.1 Start PDS2000 Installation

If the option 'Autorun for CD-Rom' is selected in the operating system the CD will start automatically when it is inserted and the welcome page of the PDS2000 InstallShield Wizard will appear.

In case the CD does not start automatically, follow these steps:

a. Select in Windows Explorer the CD and select the file 'setup.exe' to start the installation of PDS2000. The welcome page of the PDS2000 InstallShield Wizard will appear. Click on to continue.





Figure 5-1 Welcome page of the PDS2000 InstallShield Wizard

b. Before the actual installation will start the user has to select the type of setup.

PDS2000 V3.7.0.8 - InstallShield V Specify the type of installati	Vizard on that is needed.	
	Click the type of setup you prefer. Client Control Center Full Remote Presentation via Cable Remote Presentation via W/Fi	
InstallShield	<back next=""> Cancel</back>	

Figure 5-2 Type of setup in the PDS2000 InstallShield Wizard

Select 'Full'.

After the selection of the setup type click on to continue.

- c. The next page asks for a destination to install the program. The default directory is 'C:\Program Files\RESON\PDS2000 Vx.x.x.x', where x.x.x.x is the version number. With the option any directory name can be selected. Click on to continue.
- d. A window will pop up in which the ACL installer will make the PDS2000 Project folder accessible for each user. ACL also makes for MS Windows 7 the folder 'C:\Program Data\RESON\PDS2000' and for MS Windows XP the folder


'C:\Documents and Settings\All Users\Application Data\RESON\PDS2000' accessible.

e. If already an older PDS2000 version is/was installed with not the latest C-Map software, then an Update C-Map SDK dialog will appear.

<ul> <li>In order to use C-Map in this and newer versions of PDS2000 it is required that a newer version of C-MAP software is installed. Please read the texts in the C-MAP install software carefully to make the transition from the old version to the new version of the C-MAP software smoothly.</li> <li>Click Yes to start the transition, click No to skip the transition (C-MAP charts will not be available until you install the new C-MAP software).</li> </ul>	Update C-Map SDK	
Yes No	٩	In order to use C-Map in this and newer versions of PDS2000 it is required that a newer version of C-MAP software is installed. Please read the texts in the C-MAP install software carefully to make the transition from the old version to the new version of the C-MAP software smoothly. Click Yes to start the transition, click No to skip the transition (C-MAP charts will not be available until you install the new C-MAP software).

Figure 5-3

Update C-Map SDK software

From this new PDS2000 version onwards PDS2000 will only run with the new version of the C-Map software. Click on version to start with the installation of the new C-Map software. If the user clicks on no C-Map software will be installed and PDS2000 will not run with C-Map anymore. Only when the user install later on the new C-Map software PDS2000 will run again with C-Map.

- f. Click on finital in the next page of the install wizard to start the PDS2000 installation. Click on finish the installation. Installing PDS2000 will place the PDS2000 and the Dongle software on the hard disk of the computer.
- g. Click on a on the desktop to start PDS2000.



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